Disability in late-life major depression: Patterns of self-reported task abilities, task habits, and observed task performance

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Abstract

This paper describes patterns of concordance/discordance between self-reported abilities ("can do") and habits ("does do") and observed task performance of daily living tasks in 3 groups of older adults: late life depression with mild cognitive impairment (n = 53), late life depression without mild cognitive impairment (n = 64), and non-depressed, cognitively normal controls (n = 31). Self-reported data were gathered by interview in participants' homes, followed by observation of task performance. Significant differences in the patterns of response were found between controls and respondents with both late life depression and mild cognitive impairment for the cognitive instrumental activities, and between the two depressed groups and controls for the physical instrumental activities. For both sets of activities, controls exhibited the greatest overestimation of task performance. No differences were found among the groups for the less complex functional mobility and personal care tasks. However, for the more complex instrumental activities, concordance was close to, or less than, chance. The findings led us to conclude that when performance testing is not feasible, self-reports of functional status that focus on habits may be more accurate than those that focus on abilities.

Keywords

Late life depression; Mild cognitive impairment; Activities of daily living; Disability

1. Introduction

Functional status, that is, an individual's ability to perform daily tasks routinely, is an integral component of mental healthcare. It enters into diagnostic decisions as Axis V of the DSM-IV-TR™ (American Psychiatric Association, 2000) and is particularly useful in gauging the severity of illness, the effectiveness of psychiatric interventions (pharmacologic,

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psychotherapeutic, behavioral), and the need for supportive services (e.g., meals-on-wheels, chore services). From the perspective of patients, the ability to carry out daily living activities directly influences their ability to live independently in the community and their quality of life. Hence, the accurate assessment of functional status is of paramount importance because an overestimation places patients at risk, while an underestimation increases their dependency beyond that warranted by their functional status.

Information about functional status is most often obtained through interviews or questionnaires, whereby patients rate their task performance. Questions typically inquire about patients' ability, as in "Can you take your own medicine" or "Can you do your housework" (Fillenbaum, 1988, p. 144). Alternatively, questions are phrased to ask about patients' usual or habitual performance, as in "Do you take your own medicine?" or "Do you do your housework?" (Rogers and Holm, 2000). In contrast to "Can you" questions, which aim at understanding patients' ability to perform specific activities, "Do you" questions aim at understanding patients' habitual performance of these activities in the context of their daily lives (Bruce, 1999).

"Can" and "do" questions provide information about patients' perceived abilities and habits, respectively. These data are essential for planning rehabilitation because deficits in abilities require different interventions than deficits in habits. Rehabilitative interventions for deficits in abilities emphasize retraining through guided practice and adaptation, while those for deficits in habits focus on reconstituting daily living routines through practical problem solving and engagement in progressively challenging, but personally meaningful, activities (Rogers and Holm, 1991). To ascertain if task performance problems are attributable to deficits in ability or habit or a combination of ability and habit, an objective measure of functional status is needed. Hence, rehabilitation professionals supplement self-report measures with observation based ones. Observation allows clinicians to examine how various physical (e.g., balance, dexterity), sensory-perceptual-cognitive (e.g., vision, planning) and affective (e.g., willingness to participate) capacities enable or hinder task initiation, continuation, and completion. Typically, observational assessment yields an index of task ability, which is a prerequisite for habits.

In this study, we sought to elucidate the concordance among 3 indices of functional status -- self-reported task ability, self-reported task habits, and observed task performance. As most of what we know about depression-related disability is based on data from self or proxy reports, our study makes a unique contribution to the literature by anchoring this information in objective measurement. It provides an estimate of the accuracy with which patients can describe their ability to carry out routine tasks. To fulfill our aim we used an innovative observational instrument, the Performance Assessment of Self-Care Skills (Holm and Rogers, 2008). This enabled us to measure independent living skills in patients' homes (e.g., IADLs) as well as basic activities of daily living (e.g., ADLs). We further examined self-reported ability, self-reported habits, and observed performance in 3 samples of community dwelling older adults -- those post-treatment for major depression with no cognitive impairment (Depressed + No MCI), those post-treatment for depression with mild cognitive impairment (Depressed + MCI), and elderly with no history of depression or cognitive impairment (Controls). We included the Depressed + MCI sample because our data indicate that approximately 38% of patients with remitted depression have MCI and we were interested in evaluating the influence of these comorbidities on disability (Bhalla et al., 2009). Hence, these samples provided a range of emotional and cognitive health thus allowing us to broaden our consideration of functional status. We would expect the greatest concordance between self-reported and observed function to emerge in the Control participants, because they have no potentially disabling impairments. In the Depressed + No MCI sample, even though depression has remitted, residuals of the depression -- reduced

interest, apathy, lack of confidence, anxiety, sadness, pessimism -- may still be operational (Fava et al., 2002; Hybels et al., 2005; Menza et al., 2003). This led us to expect that self-report measures would underestimate observed performance, as typically these patients perform adequately during observational testing (Rogers and Holm, 2000). However, in our depressed sample with documented mild cognitive impairment, methodologic research (Chisholm, 2005) led us to speculate that their self-reported function would be overestimated rather than underestimated, because their observed performance would be deficient.

2. Methods

The research protocol was approved by the University of Pittsburgh IRB, and written informed consent was obtained from all participants.

2.1 Subjects

Participants in the present study were enrolled in a randomized clinical trial to investigate maintenance pharmacologic strategies for stabilizing emotional and cognitive functioning in late-life depression and preventing or minimizing functional disability (MH043832). For the randomized clinical trial, subjects with remitted depression were recruited from other studies of treatment for depression and from referrals by mental health practitioners. Control subjects were recruited using flyers posted in primary care physician offices. Eligible participants with remitted depression (a) had completed open, protocolized treatment for non-psychotic, non-bipolar major depression, which had been diagnosed using Diagnostic and Statistical Manual of Mental Disorders, 4th edition, text revision (DSM-IV-TR) criteria, and (b) were ≥ 65 years of age. Time 1 testing for the maintenance phase of the study (data for the current study) was conducted prior to randomization, and was based on a clinical determination of readiness for maintenance therapy. Control participants were eligible if they were ≥ 65 years of age and had no history of major depression. Based on Time 1 testing data, all participants could present without or with mild cognitive impairment (MCI), but could not be diagnosed with dementia by the University of Pittsburgh's Alzheimer's Disease Research Center (ADRC). For the present analyses, we categorized the depressed patients into those who were post-treatment for depression and had MCI (Depressed + MCI), and those post-treatment for depression but without MCI (Depressed + No MCI). Eight control participants with evidence of MCI were dropped from the analyses due to small sample size.

2.2 Procedures

The study team performed interviews, neuropsychological tests, and observations of actual task performance in participants' homes. All measures had established validity and reliability. Clinical measures were the 17-item Hamilton Depression Rating scale (Hamilton, 1960; Miller et al., 1985) (higher scores = greater depressive symptom severity), the Mattis Dementia Rating Scale (Coblentz et al., 1973; Mattis, 1976) total and scaled scores (lower scores = greater impairment), the Cumulative Illness Rating Scale for Geriatrics (Miller and Towers, 1991; Miller et al., 1992) (higher scores = greater medical burden), and the Medical Outcomes Study - Short Form (Ware and Sherbourne, 1992) (lower scores = poorer health-related quality of life). Physical measures were the Keitel Functional Test (Eberl et al., 1976) (higher scores = greater range of motion and strength impairments), and Body Mass Index (National Heart Lung and Blood Institute, 2008) (higher indices are associated with overweight or obesity). Functional status was assessed with the Performance Assessment of Self-Care Skills (PASS) self-report and observational tools (Holm and Rogers, 2008; Rogers et al., 2003). The PASS self-report tool has two scales: Abilities (can do) and Habits (does do), which are rated on a 0 – 3 scale, with higher scores indicating greater independence.

The PASS observational tool is criterion-referenced and is designed to be administered in participants' homes, thus enabling them to be tested in a familiar setting. A trained therapist provides standardized instructions for each task, observes task performance, and rates performance, on the same 0 – 3 rating scale used in the self-report tool. The PASS is not timed, and when participants experience difficulty, the therapist provides cues as necessary to facilitate task completion. For medication management, for example, participants use their own medications. First, they are asked to state when they will take the next dose of each medication, according to the directions on the labels, and then they are asked to sort their medications for the next two days using a medication organizer divided into morning, afternoon, evening and bedtime. If the therapist needs to cue the participant for any part of the task, this lowers the independence rating. Some tasks are simulated. For shopping, for example, participants are given a shopping list and asked to select grocery items from an array that varies brand names and type of vegetables. Paying for the items requires a series of cash exchanges to account for regular pricing and pricing using coupons. The two PASS self-report scales (can do, does do) were administered first, followed by the PASS observational tool. For each of the two self-report scales and the observational tool, we calculated 4 PASS domain independence scores: functional mobility, personal care, instrumental activities of daily living with a cognitive emphasis, and instrumental activities of daily living with a physical emphasis (see Table 1).

2.3 Data analysis

Data were analyzed using SAS version 9.2 (SAS Version 9.2, 2007). Demographic and clinical between-group differences were analyzed using one-way ANOVA for continuous variables and the Fisher's Exact Test for categorical variables. Significant group findings ($p < 0.05$) were followed by pairwise analyses using Tukey's post-hoc tests. PASS measures were examined as continuous variables for descriptive purposes only, as well as for the percent of participants whose self-reported Ability and self-reported Habit ratings equaled, overestimated or underestimated their PASS observed task performance. These latter analyses used Fisher's Exact Tests. Post hoc pairwise comparisons were performed for PASS variables with significant group differences.

3. Results

The demographic, clinical, and physical measures for the three groups are shown in Table 2. The Depressed + No MCI group was significantly younger than the Depressed + MCI group, and the Depressed + MCI group had completed significantly fewer years of education than the other two groups. There were no differences among the groups for gender or race.

Clinically, the Depressed + MCI group demonstrated more depressive symptoms than the Depressed + No MCI group, and both groups indicated significantly more depressive symptoms than the Control group. However, all group means were below the threshold for clinical depression (i.e., Hamilton Depression Rating Scale-17 score of 10). No differences between the depressed groups were found for lifetime age of depression onset, duration of the most recent depressive episode, or percentage with recurrent depression. Level of cognitive functioning, measured with the Mattis Dementia Rating Scale was significantly lower for the Depressed + MCI group than for the other two groups. Both groups with depression had higher medical burden scores (Cumulative Illness Rating Scale-Geriatrics) than controls. Similarly, both groups with depression reported significantly lower levels of health-related quality of life (Medical Outcomes Study Short Form-36) than did the Control group. On the physical measures, the Depressed + MCI group demonstrated greater impairments in strength and range of motion on the Keitel Function Test than the other two groups, although physical impairment was still mild. The groups did not differ with respect to Body Mass Index. Participants' mean scores on the PASS (observed task performance)

global independence scale were equivalent for the Depressed + No MCI and the Control group (2.80 and 2.79, respectively). The Depressed + MCI group scored lower at 2.55. The higher PASS mean scores indicate that participants required primarily encouragement and verbal cueing, whereas the lower PASS mean scores indicate that in addition to verbal cues, occasional gestural (e.g., pointing) and physical (e.g., physically guiding a limb; completing a subtask) cues were required for participants to complete tasks successfully.

3.1. Concordance between Self-Reported and Observed Task Performance Response Patterns

Across ability and habit the patterns of concordance/discordance between self-reported "can do" and "does do" and observed task performance for functional mobility and personal care activities of daily living did not differ significantly among the three groups. The greatest percentage of each group had concordant self-reported and observed task performance, some underestimation, and negligible overestimation (see Table 3).

For cognitive instrumental activities of daily living, the response patterns of the Depressed + MCI group differed significantly from the Control group (see Table 3). However, for both "can do" and "does do," the percentage of participants whose self-reports agreed with their observed task performance was greater for both depressed groups than the Control group, whereas overestimation of performance was greatest in the Control group.

For physical instrumental activities of daily living, the response patterns of the Depressed + MCI and the Depressed + No MCI groups differed significantly from the Control group (see Table 3). For "can do," the self-reports of the greatest percentage of participants in all groups were concordant with their observed performance. However, the depressed groups had similar percentages of overestimation and underestimation of performance in contrast to the Control group, which again overestimated its performance. Similarly, for "does do," the response patterns of the two depression groups were comparable, but significantly different from the Control group. Again, the primary difference in the patterns between the two depressed groups and the Control group was the percentage of participants in the Control group who overestimated their performance.

4. Discussion

We found that patterns of concordance/discordance between observed task performance and, self-reported task abilities (can do) and self-reported task habits (does do) for functional independence differed depending on the domain and the group (Depressed + no MCI, Depressed + MCI, Control). This finding highlights the complexity of using self-reported independence as a surrogate of objective independence.

4.1. Domain Independence

At the domain level, we found the pattern of concordance/discordance for the three groups to be comparable for two of the four domains -- functional mobility and personal care. Thus, these data also suggest that neither the depressive episode nor cognitive impairment, substantively influenced patients' perceptions of their competencies regarding these basic, primarily bodily oriented tasks. Tasks such as walking, climbing stairs, toileting, eating, dressing, and grooming are often performed multiple times in a day. Given their highly practiced, routinized nature, and the recency of their performance, our participants, for the most part, were keenly aware of their performance level, and reported it accurately. Nonetheless, a substantive proportion of each group underestimated its competence, resulting in participants perceiving their performance to be less independent than warranted by testing. While we might be inclined to associate this negativity with the depressive

episode, its occurrence in the non-clinical group, as well as the clinical groups, leads us to suspect that it may represent the emergence of preclinical disability. Functional mobility and personal care tasks, such as stair climbing, bathtub transfers, and bathing, often challenge balance and physical endurance in older adults. Thus, they initiate adaptive strategies like bathing less frequently and going up the stairs more slowly to promote their safe mobility. Our participants may have been aware of behavioral changes such as these, and hence rated themselves lower. Subtle changes like these would not have been apparent in performance observation.

It was with the more complex instrumental activities that differences in the response patterns between the groups emerged (Steffens et al., 1999). For the cognitive instrumental activities, such as medication management, bill paying, and meal preparation, the concordance/discordance pattern of the cognitively impaired, depressed group differed significantly from the control group for both abilities and habits. Unexpectedly, greater concordance was found in the cognitively impaired depressed group than in the control group, and the cognitively impaired depressed participants tended to overestimate their independence to a lesser extent than controls. The extent of underestimation was negligible. For the physical instrumental activities, such as bed making, sweeping, and garbage removal, both depressed groups differed significantly for abilities and habits from the control group. The depressed participants underestimated more and overestimated less than the controls. Perhaps those with depression became more realistic about their performance level as they confronted difficulties performing everyday tasks and lacked the cognitive flexibility to adapt their performance. Hence, their self-reports were more accurate. In contrast, normal control participants may have adapted their performance automatically when confronted with difficulties, without "calling to mind" as it were that their competence had diminished, and thus they overestimated their independence.

4.2. Guidelines for Functional Status Assessment

Although further studies must be undertaken to confirm our findings, they may have important implications for functional assessment strategies and the development of functional assessments. First, our data indicate that concordance was greater for habits (does do) than abilities (can do) for the more complex cognitive instrumental activities of daily living. It is understandable that our participants were more accurate about what they usually do than what they might be capable of doing, especially for instrumental activities of daily living that can be discretionary. Furthermore, for all three groups, self-reported abilities (can do) were overestimated more than self-reported habits (does do), which may indicate that "how often" and "how recent" a task was engaged in, may influence the accuracy of reporting. This suggests that inquiring about one's habits of daily living versus one's potential for doing an activity is the preferred measurement construct for self-report measures or clinical interviews.

Second, even at its highest, concordance did not exceed 80% for any domain or group. Thus, minimally, there is a 20% discrepancy between estimates based on self-reports and observational testing. Moreover, as we move from the simpler functional mobility and personal care tasks to the more complex cognitive and physical instrumental tasks, concordance falls (roughly another 10% – 20%) for abilities and habits. As tasks become more complex in terms of the number of steps required to complete them and the number of ways in which they can be accomplished, decisions regarding "can do" and "does do" become more difficult, resulting in less agreement between subjective and objective performance estimates. Clinically, this loss of accuracy in regard to the instrumental activities is of particular concern, because these are the home management tasks that stand at the interface between independent and assisted living. These are also the tasks that are frequently targeted in the legal determination of competency. These data suggest that more

attention needs to be directed toward the measurement of instrumental activities of daily living and identifying those patients who are at risk, because they overestimate or underestimate their performance.

Lastly, in view of the negativity and pessimism that typically characterizes depression, the validity of self-reports of functional status has been questioned (Bruce, 2001; Kennedy, 2001; Reynolds, 2007). However, it was only in regard to the physical instrumental activities that the depressed groups tended to underestimate performance to a greater extent than the control group. Furthermore, the depressed groups were as concordant or more concordant in the three other domains as the non-depressed control group. These data suggest that clinicians may place at least as much credence in the self-evaluations of depressed patients as they do for other older adults, with the exception of physically demanding household chores. Nonetheless, the data also indicate that "at least as much credence" may be close to chance.

4.3 Strengths and Limitations

As with all studies, this study had both strengths and limitations. The strengths involved the inclusion of a control sample of older adults and an observation-based functional status measure. In tandem, the control sample and observational measure allowed us to estimate the effects of remitted depression, with and without cognitive impairment, on functional status. To our knowledge, this is the first study to compare the functional status of depressed older adults to normal controls as well as to examine the association between observed and perceived disability. The study limitations include the possibility that task performance and perceptions were atypical because participants knew that they were in a research study. Another potential limitation was the inability to use covariates to examine the influence of demographic and clinical characteristics on the findings. Although no covariate analyses were explored because of sample sizes, lower levels of education, poorer cognitive functioning, and more depressive symptoms in the cognitively impaired depressed group did not seem to influence their perceptions of their abilities and habits in the cognitive instrumental activities of daily living. This lack of influence became apparent because their perceptions were significantly more concordant with their observed task performance than those of the controls. Similarly, although both depressed groups perceived poorer physical health related quality of life than controls, and the depressed and cognitively impaired group demonstrated more impairment in strength and range of motion than the other two groups, again, it was the controls who more consistently overestimated their performance of the physical instrumental activities of daily living.

4.4 Conclusions

In conclusion, self-reports are often the primary source of information about the functional status of older adults, including those who have depression or mild cognitive impairment. Our patterns of response between self-reported abilities and habits and observed task performance were not always concordant. For the more complex instrumental activities of daily living, the concordance was not much better than chance. Clinicians need to be cautious in their interpretation of self-reported performance of daily activities.. For the more complex cognitive instrumental activities of daily living, those tasks that often separate independent from assisted living, focusing on "does do," including the frequency and recency of task performance, may help to reduce overestimation of task performance.

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References

American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 4th ed.. APA; Washington, DC: 2000. (text revision)

Bhalla RK, Butters MA, Becker JT, Houck PR, Snitz BE, Lopez OL, Aizenstein HJ, Raina KD, DeKosky ST, Reynolds CF III. Patterns of mild cognitive impairment after treatment of depression in the elderly. American Journal of Geriatric Psychiatry. 2009; 17:308–316. [PubMed: 19307859]

Bruce ML. The association between depression and disability. American Journal of Geriatric Psychiatry. 1999; 7:8–11. [PubMed: 9919315]

Bruce ML. Depression and disability in late life: Directions for future research. American Journal of Geriatric Psychiatry. 2001; 9:102–112. [PubMed: 11316615]

Chisholm, D. Disability in Older Adults with Depression (Doctoral dissertation). 2005. Retrieved from http://etd.library.pitt.edu/ETD-db/ETD-search/search

Coblentz JM, Mattis S, Zingesser LH, Kasoff SS, Wisniewski HM, Katzman R. Presenile dementia. Clinical aspects and evaluation of cerebrospinal fluid dynamics. Archives of Neurology. 1973; 29:299–308. [PubMed: 4542729]

Eberl DR, Fasching V, Rahlfs V, Schleyer L, Wolf R. Repeatability and objectivity of various measurements in rheumatoid arthritis. A comparative study. Arthritis & Rheumatism. 1976; 19:1278–1286. [PubMed: 999737]

Fava GA, Fabbri S, Sonino N. Residual symptoms in depression: An emerging therapeutic target. Progress in Neuro-Psychopharmacology and Biological Psychiatry. 2002; 26:1019–1027. [PubMed: 12452521]

Fillenbaum, GG. Multidimensional Functional Assessment of Older ASdults: The Duke Older Americans Resources and Services Procedures. L. Erlbaum Associates; Hillsdale, NJ: 1988.

Hamilton M. A rating scale for depression. Journal of Neurology, Neurosurgery and Psychiatry. 1960; 23:56–62.

Holm, MB.; Rogers, JC. The Performance Assessment of Self-Care Skills (PASS). In: Hemphill-Pearson, B., editor. Assessments in Occupational Therapy Mental Health: An Integrative Approach. 2nd ed.. SLACK Incorporated; Thorofare, NJ: 2008. p. 101-110.

Hybels CF, Steffens DC, McQuoid DR, Rama Krishnan KR. Residual symptoms in older patients treated for major depression. International Journal of Geriatric Psychiatry. 2005; 20:1196–1202. [PubMed: 16315146]

Kennedy GJ. The dynamics of depression and disability. American Journal of Geriatric Psychiatry. 2001; 9:99–101. [PubMed: 11316614]

Mattis, S. Mental status examination for organic mental syndrome in the elderly patient. In: Bellak, L.; Karasu, TB., editors. Geriatric Psychiatry: A Handbook for Psychiatrists and Primary Care Physicians. Grune & Stratton; NY: 1976. p. 77-121.

Menza M, Marin H, Opper RS. Residual symptoms in depression: Can treatment be symptom-specific? The Journal of Clinical Psychiatry. 2003; 64:516–523. [PubMed: 12755653]

Miller IW, Bishop S, Norman WH, Maddever H. The Modified Hamilton Rating Scale for Depression: reliability and validity. Psychiatry Research. 1985; 14:131–142. [PubMed: 3857653]

Miller MD, Paradis CF, Houck PR, Mazumdar S, Stack JA, Rifai AH, Mulsant B, Reynolds CF III. Rating chronic medical illness burden in geropsychiatric practice and research: application of the Cumulative Illness Rating Scale. Psychiatry Research. 1992; 41:237–248. [PubMed: 1594710]

Miller, MD.; Towers, A. A Manual of Guidelines for Scoring the Cumulative Illness Rating Scale for Geriatrics (CIRS-G). University of Pittsburgh; Pittsburgh, PA: 1991.

National Heart Lung and Blood Institute. Body mass index table. 2008. Available from: URL: http://www.nhlbi.nih.gov/guidelines/obesity/bmi_tbl.htm

Reynolds CF III. Assessing the capacity to make everyday decisions about functional problems: Where does the field go from here? American Journal of Geriatric Psychiatry. 2007; 15:89–91. [PubMed: 17272728]

Rogers JC, Holm MB. Teaching older persons with depression: Educational issues. Topics in Geriatric Rehabilitation. 1991; 6:27–44.

Rogers JC, Holm MB. Daily-living skills and habits of older women with depression. Occupational Therapy Journal of Research. 2000; 20:68S–85S.

Rogers JC, Holm MB, Beach S, Schulz R, Cipriani J, Fox A, Starz TW. Concordance of four methods of disability assessment using performance in the home as the criterion method. Arthritis & Rheumatism (Arthritis Care & Research). 2003; 49:640–647. [PubMed: 14558049]

SAS. Version 9.2 2007. SAS Institute Inc.; 2007.

Steffens DC, Hays JC, Krishnan KR. Disability in geriatric depression. American Journal of Geriatric Psychiatry. 1999; 7:34–40. [PubMed: 9919318]

Ware JE Jr. Sherbourne CD. The MOS 36-item Short-Form Health Survey (SF-36). I. Conceptual framework and item selection. Medical Care. 1992; 30:473–483. [PubMed: 1593914]

Table 1

Tasks in both the Performance Assessment of Self-Care Skills (PASS) self-report and PASS observed task performance tools.

Functional Mobility	Personal Care	Cognitive IADL	Physical IADL
Bed transfers	Oral hygiene	Shopping	Cleanup after meal preparation
Indoor walking	Dressing	Bill paying by check	Sweeping
Toilet transfers		Checkbook balancing	Carrying the garbage
Bathtub and shower transfers		Mailing bills	
Stair use		Telephone use	
		Medication management	
		Obtaining critical information from a radio	
		Obtaining critical information from a newspaper	
		Small repairs	
		Home safety	
		Stovetop use	
		Use of sharp utensils	
		Playing bingo	

IADL = Instrumental Activities of Daily Living. Holm, M.B., & Rogers, J.C. (2008). The Performance Assessment of Self-Care Skills (PASS). In B. Hemphill-Pearson (Ed.), *Assessments in Occupational Therapy Mental Health* (2nd ed., pp. 101-110). Thorofare, NJ: SLACK.

Table 2

Demographics and clinical characteristics, with between-group post-hoc comparisons

	Depressed + MCI (1) N=53	Depressed + No MCI (2) N=64	Control (3) N=31	Test Statistic, F (df) N/FET
Age[*]	75.8 (6.0)	72.5 (5.9)	73.8 (5.4)	4.60 (2, 145) 147 P=0.01 2< 1
%Female	77.4 (n=41)	79.7 (n=51)	71.0 (n=22)	FET P=0.63
%Caucasain	81.1 (n=43)	95.3 (n=61)	87.1 (n=27)	FET P=0.05
Education	12.9 (2.2)	14.1 (2.8)	14.4 (2.2)	4.28 (2,145) 147 P=0.02 1<2, 3
Hamilton Depression Rating Scale-17	7.3 (3.1)	6.0 (2.9)	2.5 (1.7) n=30	28.74 (2,144) 146 P<0.0001 3<2<1
Age of depression onset	57.7 (22.3) n=52	51.8 (21.0)	--	2.17 (1,114) 115 P=0.14
Duration of most recent episode[*]	196.1 (481.3) median =60 n=52	175.8 (488.5) median = 31.0 n=63	--	1.55 (1,113) 114 P=0.22
%Recurrent depression	50.0 (n=26) n=52	59.4 (n=38)	--	FET P=0.35
Mattis Dementia Rating Scale (Scaled Score)	8.2 (2.7) (n = 51)	10.8 (2.3)	9.9 (1.9)	17.86 (2,143) 145 P<0.0001 1<2, 3
Cumulative Illness Rating Scale-Geriatrics (Total)	10.9 (2.9)	10.6 (3.2)	8.7 (3.5)	5.16 (2,145) 147 P=0.007 3<1,2
Medical Outcomes Study Short Form-36-Physical	39.2 (10.9)	42.7 (10.9)	49.2 (7.9)	9.08 (2,145) 147 P=0.0002 1, 2 < 3
Medical Outcomes Study Short Form-36-Mental	49.3 (10.4)	51.9 (8.6)	59.0 (3.1)	12.80 (2,145) 147 P<0.0001 1, 2 < 3
Keitel Functional Test[*]	29.0 (15.2)	21.2 (9.8)	16.8 (8.1)	13.38 (2,145) 147 P<0.0001 2, 3 < 1
Body Mass Index	29.3 (5.9)	29.0 (5.7)	28.5 (6.4)	0.19 (2,145) 147 P=0.83
PASS - OTP Independence	2.55 (0.53)	2.80 (0.28)	2.79 (0.21)	N/A

FET = Fisher's Exact Test. MCI = Mild Cognitive Impairment. PASS-OTP = Performance Assessment of Self-Care Skills-Observed Task Performance.

[*] Transformation used in the analyses. Means and standard deviations reported based on the original distributions.

Table 3

Self-reported abilities and self-reported habits versus observed task performance (OTP).

	Depressed + MCI (1) N=53			Depressed + No MCI (2) N=64			Controls (3) N=31			Fisher Exact *P*-value
	= OTP	> OTP*	< OTP*	= OTP	> OTP*	< OTP*	= OTP	> OTP*	< OTP*	
Functional Mobility										
Ability - SR	60.4	7.6	32.1	79.7	4.7	15.6	77.4	0.00	22.6	0.114
Habit - SR	60.4	7.6	32.1	76.6	4.7	18.8	74.2	0.00	25.8	0.242
Personal Care										
Ability - SR	60.4	5.7	34.0	68.8	0.0	31.3	67.7	6.5	25.8	0.256
Habit - SR	56.6	5.7	37.7	64.1	0.0	35.9	58.1	6.5	35.5	0.303
Cognitive IADL										
Ability - SR**	49.1	49.1	1.9	32.8	65.6	1.6	12.9	87.1	0.0	0.004 1 ≠ 3
Habit - SR**	56.6	34.0	9.4	50.0	48.4	1.6	29.0	71.0	0.0	0.005 1 ≠ 3
Physical IADL										
Ability - SR**	43.4	28.3	28.3	64.1	18.8	17.2	48.4	45.2	6.5	0.013 1, 2 ≠ 3
Habit - SR**	37.7	20.8	41.5	57.8	12.5	29.7	54.8	32.3	12.9	0.015 1, 2 ≠ 3

** Distribution of % of = OTP, >OTP and < OTP differs between the depressed + MCI, Depressed + No MCI and Controls. IADL = Instrumental activities of daily living.

* OTP = self-report overestimated performance relative to OTP; < OTP = self-report underestimated performance relative to OTP

> OTP = self-report overestimated performance relative to OTP