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Use of the Late-Life Function and Disability Instrument to Assess Disability in Major Depression

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Abstract

OBJECTIVES—To determine whether there was greater disability in subjects with depression than in those without, the correlation between disability and depression severity and quality of life, and whether improvement in disability after antidepressant pharmacotherapy was greater in those who responded to antidepressant treatment.

DESIGN—Disability in subjects with and without depression from two different studies was compared for 22 weeks. Correlations were performed for the subjects with depression between disability and depression, anxiety, health-related quality of life (HRQOL), and medical comorbidity. *T*-tests were used to compare disability between subjects who did and did not respond to antidepressant treatment and change in disability after pharmacotherapy.

SETTING—Late-life depression research clinic.

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PARTICIPANTS—The 313 subjects were recruited from primary care and the community and were aged 60 and older; 244 subjects were participants in a depression treatment protocol, and 69 subjects without depression participated in a separate longitudinal observational study of the mental and cognitive health of depression-free older adults.

MEASUREMENTS—The Late-Life Function and Disability Instrument (LL-FDI), a measure of instrumental activity of daily living, personal role, and social role functioning.

RESULTS—Subjects with depression scored lower than controls for domains measuring limitation (can do) and frequency (does do) of activities. Both disability domains correlated with depression severity, anxiety, HRQOL, and cognition. Disability improved with antidepressant treatment; for partial responders who continued to receive higher-dose antidepressant treatment out to 22 weeks, there was continued improvement, although not to the level of comparison subjects without depression.

CONCLUSION—The LL-FDI appears to discriminate subjects with depression from those without, correlates with depression severity, and demonstrates sensitivity to antidepressant treatment response. We recommend further investigation of the LL-FDI and similar disability instruments for assessing depression-related disability.

Keywords

depression; disability; measurement; aged

Most intervention studies of depression and anxiety use one primary outcome measure, usually a measure of symptoms, to capture change in the core features of the syndrome being treated. For example, the Hamilton Rating Scale for Depression (HRSD)¹ taps the emotional and neurovegetative features of depression and is frequently used to monitor changes in symptom burden during antidepressant treatment. The Hospital Anxiety and Depression Scale² is another commonly used measure of depression and anxiety; in addition to depressive symptoms, this probe assesses worry, feelings of inner tension, and somatic symptoms of anxiety such as “butterflies in the stomach.” Although these measures effectively capture the core symptoms of the psychiatric syndrome being assessed or treated, they do not address disability associated with the psychiatric condition.

“Disability” is a critical dimension of depression³ and is manifested through limited performance of activities of daily living (ADLs) (activity limitations) and reduced engagement in activities that fulfill personal and social roles (participation restrictions).^{4,5} Assessing disability is important, because many patients with depression and anxiety demonstrate significant limitations in ADLs.^{6–10} These limitations are often more profound than the core symptoms of depression (e.g., sadness, anhedonia, or nervousness). Changes in ADLs include reports of difficulty performing personal care, meal preparation, shopping and financial management, and housework, although individuals with depression also report difficulty participating in family, volunteer activities, and organized social activities.^{11–13} These latter categories of activities are not traditionally measured in typical ADL assessments but are vulnerable to depression and may be indicative of recovery.¹⁴ Indeed, *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV)¹⁵ criteria for the diagnosis of a psychiatric syndrome include disability associated with psychiatric symptoms (clinically significant distress or impairment in social, occupational, or other important areas of functioning). Disability has also been implicated as a risk factor for developing depression and anxiety.^{3,6,8,16,17} Thus, failing to assess disability as a measure of severity and treatment outcome neglects a critical dimension of mental illness. How to assess disability before and after treatment is the focus of this report.

Psychiatry and related disciplines need broad measures of disability and quality of life that will help define pathways to and from disability, including the natural course and effect of interventions on the course of illness severity and disability. To achieve this goal, the field requires assessment tools that demonstrate clear differences between patients and controls, vary with severity of mental illness, and show improvement in response to treatment. Valid measures of disability can enhance the clinical utility of psychiatric assessment by addressing an important dimension of mental illness.¹⁸ Examining a geriatric sample is informative with respect to these issues of assessment because coexisting medical and cognitive impairments further complicate the associations between depression and disability, which require careful examination.

The Late-Life Function and Disability Instrument (LL-FDI) is an outcome measure for community-dwelling older adults designed to assess and be responsive to meaningful change in two distinct dimensions: function and disability.¹⁹ This article presents observations of the LL-FDI disability component (which measures the wide spectrum of activities affected by depression) in older adults with major depressive disorder and a sample of age-equivalent subjects without depression. It was hypothesized that participants with major depression would evidence greater disability than normal controls; the LL-FDI disability component would be associated with measures of depression and anxiety severity, impaired health-related quality of life (HRQOL), cognitive status, and burden of medical comorbidity; and disability would improve for subjects with depression after antidepressant pharmacotherapy, with greater improvement in responders than in nonresponders.

METHODS

Participants

Subjects with Depression—Subjects were aged 60 and older and were participants in a late-life depression treatment study using escitalopram (Geriatric Depression: Getting Better, Getting Well [MH037869]).²⁰ Subjects were recruited from primary care practices affiliated with the University of Pittsburgh Medical Center, from primary care practices of community partners, and from specialty mental health clinic for older adults with mood and anxiety disorders. Recruitment also occurred by word of mouth, referrals from clinicians, advertisements, and presentations to lay groups of older adults and their families. All subjects were currently experiencing a nonpsychotic, unipolar major depressive episode as established by the Structured Clinical Interview for DSM-IV21 (SCID), with baseline ratings of 15 or higher on the 17-item HRSD (HRSD-17)¹ and at least 18 on the Folstein Mini-Mental State Examination (MMSE).²² Subjects were excluded if they had ever received a diagnosis of dementia. Potential participants were also excluded if they had a lifetime diagnosis of bipolar disorder, schizophrenia, or schizoaffective or other psychotic disorders or a history of alcohol or drug abuse within the previous 12 months.

Participants received open-label treatment with escitalopram 10 mg/d plus clinical management for 6 weeks, which involved routine assessment of depressive symptoms, management of any treatment-emergent side effects, and basic psychoeducation about depression and its treatment.

At the end of 6 weeks, responders (defined as HRSD-17 score ≤ 10) exited the study. Incomplete responders (defined as HRSD-17 score ≥ 11) were then randomized to extension treatment with escitalopram 20 mg/d plus clinical management or escitalopram 20 mg/d plus interpersonal psychotherapy (IPT) for up to an additional 16 weeks (to test the primary hypothesis of the parent study that combination treatment works better than pharmacotherapy for incomplete responders).

Comparison Subjects without Depression—Comparison subjects without depression were women and men aged 65 and older with no evidence of depression or dementia participating in a protocol that involved serial assessments over 2 years (Maintenance Therapies in Late-Life Depression-III [MH043832]). All recruited controls were included in these analyses. Controls had no history of any mental illness or major cognitive impairment, as established by administration of the SCID and neuropsychological testing. Recruitment procedures were the same as for the subjects with depression. The University of Pittsburgh institutional review board approved both of these studies, and all participants provided written informed consent.

Measures

Disability—The LL-FDI was selected, because it has been shown to assess meaningful concepts of disability across a wide variety of life tasks and social roles specifically in older adults with relatively few items¹⁹ and to be a more-precise and comprehensive instrument than the physical functioning scale of the Medical Outcomes Study 36-item Short Form Survey (SF-36) and the London Handicap Scale for assessing function and disability in community-dwelling older adults.²³ The LL-FDI assesses two components: functioning and disability. The functioning component addresses impairment in executing discrete physical actions or activities in three body-oriented domains (upper extremity, basic lower extremity, and advanced lower extremity function). The disability component addresses limitations with a wide range of instrumental ADL (IADL), personal, and social activities, which makes it ideally suited for measuring disability in this population. The present study used only the LL-FDI disability component, because published studies indicate that individuals with depression and anxiety do not frequently experience physical impairment as much as they experience disability in IADL, personal role function, and social activities (the items constituting the disability component of the LL-FDI).^{24,25}

The disability component measures the limitation with which individuals execute activities requisite to social roles at home and in the community (the “can do activities” domain) and measures the frequency with which individuals perform these same activities (i.e., the “does do activities” domain). Examples of items on the disability component include caring for the home, going out with friends, preparing meals, participating in organized social activities, providing care or assistance to others, and inviting others into the home.²⁶ These activities map onto activity limitations and participation restrictions, two components of interest in the International Classification of Functioning, Disability, and Health model of function and disability.^{4,27}

The LL-FDI was administered as a paper-and-pencil survey that the participants completed. The items were rated on a 5-point Likert-like scale. Individuals were presented with a list of 16 activities and asked, “To what extent do you feel limited in ...?” Response options included not at all, a little, somewhat, a lot, and completely. Then individuals were presented with the same list of activities and were asked, “How often do you ...?” Response options included very often, often, once in a while, almost never, and never. The time required to administer or complete the assessment was approximately 5 minutes. Raw scores for all items on both measures were scaled to a 100 metric scale with 0 = less frequently or more limitation and 100 = more frequently or less limitation for each item. The LL-FDI was administered to participants with depression at baseline and after 6 weeks of treatment with escitalopram. Partial responders who received extension antidepressant treatment also had the measure administered at Week 22. Control subjects completed the LL-FDI at baseline only. The Cronbach alphas for the frequency and limitation scales were 0.84 and 0.92, respectively.

Depression—The HSRD-17¹ was used to assess depression severity at baseline and to detect change in depression severity during the course of treatment. Interrater reliability was maintained at an interclass correlation coefficient (ICC) of 0.95.

Anxiety—The Hamilton Rating Scale for Anxiety (HRSA)²⁸ was used to assess anxiety severity at baseline. Interrater reliability was maintained at an ICC of 0.93.

Quality of Life—The SF-36²⁹ was developed as a generic measure of perceived health status. It provides self-reports of mental and physical functioning and perceived psychological well-being. Published internal consistency reliability of the physical and mental component subscales are 0.92 and 0.88, respectively.³⁰

Comorbid Medical Burden—Coexisting medical burden was assessed using the Cumulative Illness Rating Scale adapted for use with geriatrics (CIRS-G).^{31,32} The CIRS-G can be successfully applied in medically³³ and psychiatrically impaired older adults, with good interrater reliability and face validity.³¹ Interrater reliability was maintained at an ICC of 0.96.

Cognition—The MMSE²² is a brief mental status test for use with older adults and was used as a screening test for study inclusion. Participants were required to have an MMSE score of 18 or greater to participate. Interrater reliability was maintained at a level of .98. It was decided to accept subjects with MMSE scores within the impaired range to increase the generalizability of the findings, but subjects were excluded if they had received a diagnosis of dementia. Subjects with mild cognitive impairment (for the purposes of these studies defined as memory or other cognitive impairment that was not interfering with their daily functioning) were included in the study.

Statistical Analyses

Three critical performance characteristics of the LL-FDI were addressed: ability to distinguish between people with and without depression, correlation with depression severity and HRQOL, and sensitivity to treatment response. For analysis one, *t*-tests were performed for each of the variables listed in Table 1, adjusting for unequal variance if necessary. Boxplots were created for the two subscales of the LL-FDI to illustrate the distribution and identify outliers. For analysis two, Pearson correlations were calculated between the domains of the LL-FDI, depression and anxiety severity, and HRQOL. For analysis three, paired *t*-tests were used to determine whether there was significant change after 6 weeks of treatment for the patients with depression, and group *t*-tests were used to determine whether levels of disability differed between responders and nonresponders at 6 weeks.

RESULTS

In the study group of 244 participants with depression and 69 controls, 88.8% were European American, 10.5% were African American, and 0.6% were Asian American; 70.0% were female; and 52.7% were married or cohabiting, 26.5% were widowed, 15.0% were divorced or separated, and 5.8% had never married.

Demographic and Clinical Characteristics According to Subject Group: LL-FDI Differences Between Subjects with Depression and Controls

As expected, subjects with depression had higher HRSD-17 scores and lower ratings of physical and mental health according to the SF-36. The average MMSE scores of the subjects with depression suggested worse performance than that of the controls ($t = 3.89$, degrees of freedom (df) = 208, $P < .001$). As assessed using the CIRS-G, subjects with depression had more medical comorbidity ($t = -2.97$, $df = 277$, $P = .003$) than controls.

For the LL-FDI disability component limitation scaled score (can do domain) and the frequency scaled score (does do domain) at baseline, people with depression showed greater impairment than those without (Table 1). Figure 1 displays boxplots of the LL-FDI subscale distributions at baseline for the groups with and without depression. The boxplots represent the medians and interquartile ranges of the frequency and limitation subscales, showing minimal overlap between the interquartile ranges of the two groups.

Correlations Between LL-FDI and Illness Severity and HRQOL for Subjects with Depression

For the limitation scaled scores (can do), associations of at least 0.3 (suggesting at least a moderate correlation)³⁴ were found with the HRSD-17 (correlation coefficient (r) = -0.38), the HRSA (r = 0.41), and the physical component subscale (PCS) of the SF-36 (r = 0.47). For the frequency scaled scores (does do), associations of at least 0.3 were found with the physical component subscale of the SF-36 (r = 0.35) and the MMSE (r = 0.32). No significant associations for the “can do” or “does do” domains were found with the mental component subscale of the SF-36 or medical comorbidity as measured using the CIRS-G.

Change in Disability Scores During Treatment with Escitalopram

Changes in LL-FDI scores after 6 weeks of treatment with escitalopram were statistically reliable for the limitation (t = -5.28 , df = 1.97 , P < $.001$) and frequency (t = -4.46 , df = 2.02 , P < $.001$) subscales (Table 2).

At Week 6, partial and nonresponders (n = 144) continued to receive escitalopram for another 16 weeks at a dose of 20 mg/d. Figure 2 illustrates the change in LL-FDI scores out to 22 weeks of treatment with escitalopram 20 mg plus clinical management or IPT. The figure shows continued improvement in the limitation and frequency subscales of the LL-FDI, although even at 22 weeks, the LL-FDI scores of the subjects with depression never “catch up” to those of the control subjects assessed at baseline. Thus, at Week 22, the limitation (t = 5.37 , df = 162 , P < $.001$) and frequency (t = 6.46 , df = 163 , P < $.001$) subscales demonstrated reliable differences between the subjects with depression and normal controls.

Comparison of Disability Scores Between Responders and Nonresponders at Week 6

LL-FDI scores of responders and partial or nonresponders were compared after 6 weeks of treatment with escitalopram (table 2 and Figure 3). Response was defined as an HRSD score less than 10. The mean difference in the scaled limitation score (can do) after 6 weeks of treatment with escitalopram between the responders and partial or nonresponders was 10.1. The mean difference in the scaled frequency score (does do) after 6 weeks of treatment with escitalopram was 3.8. These between-group differences were statistically significant between baseline and Week 6 for the “can do” (t = -5.53 , df = 203 , P < $.001$) and “does do” (t = -4.07 , df = 203 , P < $.001$) subscales.

DISCUSSION

It was observed first that untreated people with depression have worse scores on the “can do” and “does do” scales of the LL-FDI than people without depression, suggesting greater disability in older adults with depression than in comparison subjects without depression. A report of worse scores in multiple domains of self-reported functioning (e.g., bodily pain, general health, social functioning, vitality, and mental health) in mixed-age primary care patients with major or minor depression than in patients without depression supports this finding.³⁵ In addition, recent findings from the National Comorbidity Survey Replication³⁶ suggest that, for adults of all ages, mental conditions (e.g., major depression) account for more than half as many disability days as all physical conditions at the population level.⁷ The World Health Organization has also identified depression as the second leading cause of disability-

adjusted life years (the sum of years of potential life lost because of premature mortality and the years of productive life lost because of disability) in people aged 15 to 44 of both sexes combined.³⁷ Thus, the emotional distress associated with major depression is a significant contributor to disability and role impairment.

Second, it was observed that, for participants with depression, greater severity of depression and anxiety was associated with worse performance on the LL-FDI limitation (can do activities) subscale. By contrast, the lack of clinically relevant associations (small effect sizes) between the mental component subscale (MCS) of the SF-36, which is a generic measure of mental HRQOL, and the limitation or frequency subscales for subjects with depression suggest that the LL-FDI may be measuring constructs distinct from those probed by the MCS of the SF-36. In addition, significant associations were found of at least moderate effect between the physical component subscale (PCS) of the SF-36 and the “can do” and “does do” subscales for participants with depression. Although the PCS is not a disability instrument, these associations suggest that worse perceived physical functioning is associated with activity limitations and participation restrictions per the LL-FDI.

Neither the limitation nor the frequency scale of the LL-FDI correlated highly with medical comorbidity as measured using the CIRS-G, in contrast to their correlation with depression and anxiety severity. This suggests that, for older adults, emotional distress (e.g., depression and anxiety) may be more strongly associated with activity limitations and participation restrictions than the level of comorbid medical burden.

The association between the frequency domain and MMSE score suggests that mild cognitive impairment may interfere with the amount of time people with depression spend on activities. For example, frequency (e.g., the “does do” domain) was associated with MMSE score, but limitation (e.g., the “can do” domain) was not. This suggests that, although older patients with depression may have the ability to perform the activities assessed by the LL-FDI, they perform them less frequently, perhaps as a function of declining cognition, as well as depression severity. Another way of understanding this observation is that the LL-FDI measures “mandatory” ADLs (self-care, managing finances), as well as “nonmandatory” ADLs (e.g., visiting with friends, participating in organized social events). A decrease in these activities is consistent with the “shrinking world” experienced by so many older adults with depression.

Disability (“can do” and “does do”) improved after 6 weeks of antidepressant pharmacotherapy, with responders having less disability at Week 6 than partial or nonresponders. That said, responders still demonstrated greater disability in the “does do” and the “can do” domains than controls without depression (Figure 2). It was surprising that, in a group of older adults treated for MDD, “can do” improved more than “does do.” A possible explanation may be that, as anhedonia, apathy, and social isolation diminish with the improving depression, these patients feel they are able to function at a higher level, although it may be that their sense of improved functioning is not linked with a behavioral change. Integrating depression care with functional restoration treatments such as those offered by rehabilitation specialists may help these patients leverage their thoughts into actions.

Partial responders who continued to receive more-intensive antidepressant treatment did not improve to the level of the control group without depression even after 22 weeks of treatment. These data suggest that functional recovery from depression can take longer than 4 to 5 months or that functional recovery from depression requires more than escitalopram with or without depression-specific psychotherapy such as IPT. It is encouraging that the trajectory over time is toward functional recovery, although these results are cause for concern, because disability is a risk factor for the development of depression and its relapse.⁶ Because the subjects observed out to Week 22 were partial responders to escitalopram 10 mg at 6 weeks, prolonged disability

appears to be associated with incompletely treated depression and early relapse, similar to anxiety burden³⁸ and worse reported quality of life.³⁹

A unique aspect of this study is the differentiation in the assessment between whether participants “could do” activities and whether they actually “did do” activities. The International Classification of Functioning, Disability and Health identifies these two constructs as qualifiers of disability, referring to capacity (can do) and performance (does do). Given that there were differences between these two qualifiers of disability and the health-related factors with which they were associated, it is reasonable to suggest that the participants were able to understand and report differences in their disability using the two scales, but further examination is required before firm conclusions can be drawn.

Limitations of this study include lack of a placebo-control group to differentiate the antidepressant treatment effects and improvement in disability from nonspecific changes and passage of time. Because the LL-FDI was originally normed in a North American population, some items may not be relevant for other cultures. The lack of an objective measure of performance such as the Performance Assessment of Self-Care Skills (PASS)⁴⁰ with which to validate the self-report findings of the LL-FDI also limits the interpretability of the findings. For example, the improvement in the LL-FDI and the PCS may reflect a change in self-report biases associated with improvement in depression. It is planned to incorporate the PASS in future studies to provide a criterion standard of IADL functioning.

There are several implications of these observed differences between participants with and without depression. The first is that a shift from treatment to prevention of depression may minimize the loss in functioning that these results and those of other studies^{3,41} have shown when older adults are depressed. Preventing depression in older adults by identifying and modifying depression risk factors such as comorbid anxiety,⁴² low self-esteem,²⁰ cardiovascular disease,⁴³ pain,^{44,45} and social isolation¹⁶ before depression develops may help to maintain a higher level of functioning. The paradigm of an “indicated” intervention for mental health for persons at risk of psychiatric morbidity,⁴⁶ outlined by the Institute of Medicine,⁴⁷ is being used in a clinical trial of older adults at risk of becoming depressed. The preventive effects of problem-solving therapy (PST)⁴⁸ on preventing depression and minimizing disability is being studied in this group of high-risk individuals.

Another implication of these findings is the need to increase the training of mental health clinicians in the practical management of depression-associated disability. For example, a review of the literature⁶ showed that, in late life, depression is a risk factor for disability, disability is a risk factor for depression, and when depression and disability occur simultaneously, both worsen, both remain constant, or both improve, suggesting a “synchrony of change” between depression and disability that has also been described in younger populations.⁴⁹ Therefore, aggressively treating depression with pharmacotherapy and psychotherapy interventions and linking these interventions with disability-specific interventions may be the most effective approach for managing depression and disability in late life. Professionals in the rehabilitation sciences, in particular occupational therapy, have extensive expertise in assessing and treating disability in IADLs.⁵⁰ In particular, participation in medical rehabilitation activities has been shown to be effective in reducing depression and anxiety symptoms in medically rehabilitating older adults.⁵¹ Collaboration with rehabilitation specialists may be helpful in augmenting existing psychotherapy and pharmacotherapy interventions for individuals with depression.

In conclusion, these results suggest that disability, conceptualized as activity limitations and participation restrictions, is a significant feature of major depression. The LL-FDI measure of disability may provide a precise assessment of disability severity and change during treatment for older adults living with depression

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Figure 1.

These boxplots illustrate the median and interquartile range. The whiskers extend to the most extreme data point, which is no more than 1.5 times the interquartile range. Any data points beyond the whiskers are considered outliers.

Figure 2.

These plots compare the change in the scaled scores over time for the depressed from the baseline scaled score (drawn to Weeks 6 and 22 for comparison purposes) for the participants without depression. Participants with depression who were incomplete responders at Week 6 were followed until Week 22. "Does Do" (Scaled): Depressed N = 241, 205, 96 (solid); Nondepressed N at baseline = 69 (dashed). "Can Do" (Scaled): Depressed N = 236, 205, 95 (solid); Nondepressed N at baseline = 69 (dashed).

Figure 3.

These plots compare the change in the scaled scores over time for responders and nonresponders out to 6 weeks of treatment. "Does Do" (Scaled): Responders N = 72, 73, (solid); Nonresponders N = 133, 132 (dashed). "Can Do" (Scaled): Responders N = 71, 73 (solid); Nonresponders N at baseline = 129, 132 (dashed).

Table 1

Descriptive and Inferential Statistics Comparing Participants with and without Depression at Baseline

Variable	Not Depressed (n = 69)	Depressed (n = 244)	Test Statistic	Range of Possible Scores
Comorbid anxiety, n (%)	0	136 (55.7)		—
Female, n (%)	50 (72.5)	169 (69.3)	$\chi^2 = .26$, $df = 1$, $P = .61$	—
Caucasian, n (%)	63 (91.3)	215 (88.1)	$\chi^2 = .55$, $df = 1$, $P = .46$	—
Married or cohabitating, n (%)	43 (62.3)	122 (50.0)	$\chi^2 = 3.27$, $df = 1$, $P = .07$	—
Age, mean $\pm$ SD	74.5 $\pm$ 6.1	72.8 $\pm$ 8.0	* $t = 1.82$, $df = 141$, $P = .07$	—
Education, years, mean $\pm$ SD	14.3 $\pm$ 2.8	13.6 $\pm$ 2.9	$t = 1.79$, $df = 309$, $P = .07$	—
Hamilton Rating Scale of Depression (17 item), mean $\pm$ SD	2.4 $\pm$ 2.0	18.8 $\pm$ 3.2	* $t = -51.27$, $df = 171$, $P < .001$	0–54
Medical Outcomes Study 36-item Short Form Survey, mean $\pm$ SD				
Physical Component Subscale	46.9 $\pm$ 7.9	41.8 $\pm$ 11.9	* $t = 4.18$, $df = 166$, $P < .001$	0–100
Mental Component Subscale	59.6 $\pm$ 3.4	32.8 $\pm$ 9.9	* $t = 34.93$, $df = 297$, $P < .001$	0–100
Cumulative Illness Rating Scale—Geriatrics, mean $\pm$ SD	8.3 $\pm$ 3.1	10.2 $\pm$ 3.8	$t = -2.97$, $df = 277$, $P = .003$	0–56
Mini-Mental State Examination, mean $\pm$ SD	28.8 $\pm$ 1.2	28.0 $\pm$ 2.3	* $t = 3.89$, $df = 208$, $P < .001$	0–30
Late-Life Function and Disability Instrument scaled score, mean $\pm$ SD				
Frequency (does do)	55.4 $\pm$ 5.9	46.6 $\pm$ 7.2	$t = 9.39$, $df = 208$, $P < .001$	0–100
Limitation (can do)	81.4 $\pm$ 13.1	63.6 $\pm$ 13.3	$t = 9.79$, $df = 303$, $P < .001$	0–100

* Approximate t -test for unequal variance.SD = standard deviation, χ^2 = chi-square; df = degrees of freedom.

Table 2

Paired t -Tests Between Baseline and 6 Weeks for Subjects with Major Depression

Variable	Mean Difference ($\mu_1 - \mu_2$)	t -Value (Degrees of Freedom)	t -test P -Value	Cohen's d^*	Standardized Response Mean †
All subjects					
LL-FDI limitation "can do" domain	-4.2	-5.28 (197)	<.001	-0.32	-0.38
LL-FDI frequency "does do" domain	-1.32	-4.46 (202)	<.001	-0.18	-0.3
HRSD17	7.49	21.90 (206)	<.001	2.35	1.52
Depression full responders					
LL-FDI limitation "can do" domain	-8.48	-5.46 (70)	<.001	-0.81	-0.65
LL-FDI frequency "does do" domain	-2.22	-3.88 (71)	<.001	-0.31	-0.46
HRSD17	11.95	29.88 (72)	<.001	4.61	3.5
Depression partial and nonresponders					
LL-FDI limitation "can do" domain	-1.8	-2.20 (126)	.03	-0.14	-0.2
LL-FDI frequency "does do" domain	-0.89	-2.56 (130)	.01	-0.14	-0.22
HRSD17	5.07	15.46 (133)	<.001	1.69	1.34

All scores are scaled for age and education.

* Calculated using $\frac{\mu_1\mu_2}{\sigma_1}$, where σ_1 is the standard deviation of the baseline measurement.

† Calculated using $\frac{\mu_1\mu_2}{\sigma^{**}}$, where σ_1 is the standard deviation of the baseline measurement and σ^{**} is the standard deviation of change. LL-FDI = Late-Life Function and Disability Instrument; HRSD17 = Hamilton Rating Scale for Depression—17 item version.